ACTION DESCRIPTION MEMORANDUM

FOR

903 PAD, MOUND AND EAST TRENCHES FINAL REMEDIAL ACTIONS

Authorization No. A01790

EG&G Rocky Flats, Inc.
Rocky Flats Plant

Operating Contractor for

U.S. Department of Energy

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Preparer _____

Facilities Project Management* _____ 1/16/91

Safety Analysis Engineering* _____ 1/16/91

Legal* _____ 2/25/91

NEPA department* _____ 1/16/91

NEPA department Manager _____ 3/12/91

Director, Environmental Restoration _____ 3/14/91

* NEPA Compliance Committee

Reviewed for Classification/UCNI
By: George H. Setlock
Date: 12/19/90

## 1.0 PURPOSE

The purpose of this Action Description Memorandum (ADM) is to provide sufficient information to permit a reasonable determination of the level of NEPA documentation required in compliance with Doe Orders 5440.1C and AL 5440.1B, "Implementation of the National Environmental Policy Act (NEPA)."

## 2.0 PROPOSED ACTION

The proposed action is at the 903 Pad Area, Mound Area and East Trenches Area also called Operable Unit (OU) No. 2. The action entails a multiphased program consisting of the assessment and characterization of point sources of contamination, identification of migratory pathways, followed by remedial investigations, feasibility studies, and the final remedial corrective action.

### 2.1 NEED FOR THE ACTION

The U.S. Department of Energy (DOE) through the Environmental Restoration Department of EG&G has developed a phased program to determine the source of soil and ground water contamination. The purpose of the proposed action is to provide for short-term and long-term protection of human health and the environment.

Through past waste management practices, radioactive and hazardous waste drums were buried from 1958 to 1967 at selected areas southeast and east of the Plant. The burial sites comprise seventeen areas designated individual hazardous substance sites (IHSSs) 109, 112,115,183 (903 Pad); 108, 113, 154, 158 (Mound Area); and 110, 111.1-111.8, 216.2, 216.3 (East Trenches Area).

The remedial investigation has been performed and has identified levels of hazardous chemicals, primarily carbon tetrachloride, tetrachloroethane, and trichloroethane, and radioactivity in samples of soil, surface water, and ground water in both the alluvium and bedrock. There is considerable interaction between the surface water and ground water. As a result, organic contamination is being found in seeps downgradient of the 903 Pad and in the upper reaches of South Walnut Creek at the Mound Area.

There is no indication that the contaminants present at OU No. 2 pose an immediate threat to the health and safety of the public or employees at the Rocky Flats Plant (RFP). It is imperative, however, to further characterize the contaminants and the site environs, to evaluate the potential hazards to the environment and the affected population, and to identify appropriate remedial actions to be taken in these areas.

This proposed action is pursuant to the Compliance Agreement between DOE, the State of Colorado Department of Health (CDH), and the Environmental Protection Agency (EPA); and the Federal Facility Agreement and Consent Order (FFACO) known as the Inter-Agency Agreement (IAG).

## 2.2 LOCATION OF THE ACTION

The Rocky Flats Plant is located in northern Jefferson County, Colorado, approximately 16 miles northwest of Denver. The plant consists of approximately 6,550 acres of federally owned land. Major buildings are located within the plant security area of approximately 400 acres. The security area is surrounded by a buffer zone of approximately 6,150 acres. The immediate area around the Rocky Flats Plant is primarily agricultural or undeveloped land, with several population centers located within 10 miles of the facility. A detailed description of the local demographics and environment is presented in the Rocky Flats Plant Site Final Environmental Impact Statement (DOE/EIS-0064, April 1980). See attachment No. 1 for the location of the sites.

The 903 Pad Area and Mound Area are located at the east side of the RFP, primarily within the security fence, i.e., the exterior fence surrounding the central part of the plant. The Mound Area (four sites) is immediately north of the east access road, and the 903 Pad Area (five sites) is opposite the Mound Area on the south side of the road. Both areas extend to the East Guard Gate.

The East Trenches Area consists of nine burial trenches and two spray irrigation sites. These sites are located both north and south of the east access road. These sites are located outside the fenced security area, i.e., beyond the exterior fence but are contained within the buffer zone.

The total area that will require corrective action is fifty acres. Activities associated with the remedial action will be required both inside and outside the fenced security area, but well distant from the edge of the buffer zone. Because all three areas adjoin the main east access road, special precautions would have to be taken not to impact either the workers or access to and from the plant along that road.

## 2.3 DESCRIPTION OF THE PROPOSED ACTION

The proposed action is a program of remedial action or actions to address the following goals:

1) Contain, reduce, and/or eliminate site contaminants identified as representing possible sources of exposure to humans and other potential receptors.

2) Reduce or eliminate receptor exposure to site contaminants by controlling potential contamination pathways.

This action is being conducted as an integral part of the Environmental Restoration Department (ER Department) which is to identify, assess, and correct existing or potential environmental problems at DOE facilities.

## 2.4 ALTERNATIVES TO THE PROPOSED ACTION

The extent of the remedial action program and possible alternative actions have not yet been established. Because the conditions and hazards vary a great deal at the IHSSs in these areas, it is unlikely that a single type of action will suffice at individual sites.

- Most sites involve radioactivity in the surface soils as well as volatile organic compounds (VOCs) which may require different treatment technologies for control or cleanup.

- At some sites VOCs are found primarily in soils, while at other sites VOCs are found in ground water.

- Some sites still retain potential contamination sources for both soil and water such as buried drums, while at other sites the contamination remains after previous cleanup efforts removed the major sources of contamination.

- A "No Action" alternative is not a viable solution due to the extent of contamination from both radioactive and hazardous constituents found in the soil, surface water, and ground water. Although there is no immediate threat to human health and the environment, as long as the drums and contamination remain, the potential for migration and resuspension increase, therefore exposing the public and the environment to hazards.

The evaluation on the proposed remedial alternatives will be based primarily on the information derived for the purpose of site characterization and source characterization. Geotechnical data from source boreholes will be used to evaluate the effectiveness of:

- Attrition scrubbing
- Solvent extraction
- Soil immobilization
- Soil flushing/bioreclamation
- In-situ vitrification
- Capping/subsurface barriers

## 3.0 POTENTIAL ENVIRONMENTAL AND SAFEY ISSUES

### 3.1 CONSTRUCTION ISSUES

The environmental restoration actions for the 903 Pad and associated areas may involve a variety of activities including containing, reducing, or eliminating contamination sources and/or by managing contamination migration by reducing its mobility or toxicity. While the proposed actions are intended to protect the local ecosystem and reduce the potential for hazard to the public health, implementation of these actions may, in themselves, result in potential impacts from routine operations or accident conditions. Depending on specific actions taken, long-term environmental impacts may be associated with:

- Onsite waste management activities associated with contaminated material and sources.
- Offsite transportation and disposal of contaminated material.

With the exception of a "No Action" alternative, any remedial action may be expected to involve various degrees of field construction efforts including trenching, excavation, grading, or

capping operations. Direct effects of this work will include short-term minor impacts common to construction work. For example, if removal of buried waste is involved, back filling operations may be required to restore the land surface to its previous status.

Other possible alternatives, such as capping, will result in minor long-term changes to land features. Because each of the three areas of interest are located in close proximity to one of the main access roads, some field construction or other remedial activities may have temporary impacts on access to the rest of the Rocky Flats Plant site.

### 3.1.1 RADIATION SAFETY AND CONFINEMENT

A site survey would be performed by Radiation Protection Personnel prior to any excavation activities. Contamination, if encountered, will be handled as required by DOE Order and procedure. A site health and safety plan would be written to ensure any implememted remedial actions will conform to all applicable health, safety and environmental requirements.

### 3.1.2 EXPLOSION

Other than from commonly encountered construction hazards, there are no unique explosion hazards associated with the proposed action.

### 3.1.3 FIRE

Other than from commonly encountered construction hazards, there are no unique fire hazards associated with the proposed action. Administrative controls will be required to avoid buildup of fire fuel loading at the construction site. Construction activities will not affect the current fire detection and suppression features in use at the RFP.

### 3.1.4 HIGH VOLTAGE OR CURRENT

Voltages and currents used for this action are typical of those used throughout the plant and are common hazards of industry. All electrical work will comply with applicable rules of the latest edition of the National Electrical Code.

### 3.1.5 HAZARDOUS WASTE MATERIAL AND OTHER SUBSTANCES

Any implementation of remedial actions will conform to the applicable health, safety, and environmental requirements. Monitoring and sampling locations will be augmented to ensure compliance with environmental requirements for any remedial actions taken.
Major environmental issues include:

A) Occupational exposure - buried waste site improvements and/or contaminated waste treatment may result in occupational exposures to both toxic substances and radioactive materials. Appropriate field operations and waste-handling procedures will be followed to minimize this exposure. Special consideration will be given to possible effects on other RFP workers using the east access road, assigned to the east

security guard house, or assigned to unrelated work in other buildings near the work areas.

B) Non-occupational exposure - implemented actions will be directed towards preventing potential exposure to the public from contaminants that have the potential to migrate beyond site boundaries. Construction activites will be managed to limit airborne contaminants resulting from excavation work, and any waste processing effluents will be controlled in accordance with existing environmental requirements.

C) Onsite transportation - any onsite transportation of waste will be by truck or pipeline. Impacts other than those normally incident to transportation (e.g. pollution, potential for injuries or fatalities) include the potential for exposure of other RFP workers to both toxic substances and radioactive materials. Onsite transportation activities will be managed to minimize attendant risks.

### 3.1.6 MECHANICAL

There are no mechanical hazards associated with this action other than usual industrial hazards associated with materials transport and handling and construction hazards.

### 3.1.7 OTHER HAZARDS

No hazards other than those described above have been identified.

## 3.2 NUCLEAR CRITICALITY SAFETY

This project will not involve fissile material in sufficient quantities where a nuclear excursion is possible.

## 3.3 POSTULATED ACCIDENTS

This project may involve hazards classified as low per DOE Order 5481.1B, "Safety Analysis and Review System." Moderate or high hazard classification would require additional safety analyses to determine its impact on existing final safety analysis reports (FSARS).

## 3.4 IMPACTS FROM OPERATIONAL EFFLUENTS

This project is expected to increase environmental impacts from construction and remedial activity. Any implementing remedial actions will conform to all applicable health, safety, and environmental requirements.

Airborne emissions of hazardous materials may be impacted by the proposed action. An application for approval by the EPA for new construction, which results in an increase in airborne radioactivity, may be required in conformance with the requirements of the Clean Air Act in 40 CFR 61 Subparts A and H. EPA's computerized model, AIR DOS, will be utilized to determine if the radionuclide standards have been exceeded according to the national emission

standards for hazardous air pollutants (NESHAPs).

Submittal of an Air Pollution Emissions Notice (APEN) to the State of Colorado for air emissions of toxic materials will be required for this facility. Construction activities will be managed to control airborne contamination resulting from excavation work. Dust suppression techniques will be utilized at all times during construction and/or windy days.

Operational effluents are expected to increase as a result of the proposed action. Since the remedial action will be collecting and diverting contaminated ground water for treatment and later disposal, the greatest impact will be to the South Interceptor Ditch where the treated water will be discharged. Treated water must meet the standards set forth by the Colorado Water Quality Control Commission for Segment 5 of Big Dry Creek Basin and RFP's National Pollutant Discharge Elimination System (NPDES) permit. Allowances need to be made in the NPDES permit for discharge of the treated water.

## 4.0 REGULATORY COMPLIANCE

### 4.1 RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

#### 4.1.1 CONSTRUCTION

Since the remedial action consists entirely within designated IHSSs, all construction and excavation will be in accordance with all State, EPA, and RFP procedures. Basic requirements for construction within an IHSS will include but are not limited to the following:

- Construction within the IHSS will be done in conjunction with a site sampling plan to be presented to the EPA. Following review of the plan, site characterization sampling will be completed and a health and safety plan developed for construction work.

- Soil from the IHSS will not be removed from the IHSS. Deposition of soil will be done in a manner as to prohibit its spread (by wind, erosion, etc.) outside of the IHSS boundary.

#### 4.1.2 OPERATIONS

Any hazardous or mixed waste that might be generated as a result of this action will be handled in accordance with the requirements of RCRA as implemented in the Colorado Hazardous Waste Regulation (6 CCR 1007.3).

### 4.2 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

The proposed action is categorized as further development within RFP's site. There will not be any adverse effect on:

- Wetlands
- Floodplains
- Historical, Cultural or Archaeological Resources

- Threatened and Endangered Species

Consultation with the U.S. Army Corps of Engineers was conducted in the fall of 1989. The general location of jurisdictional wetlands on plantsite were characterized. It has been subsequently determined that the proposed action is not located in, nor in a position to have an effect upon known jurisdictional wetlands. The proposed action is not located in a designated 100-year floodplain.

The proposed action may be part of the Plantwide Environmental Impact Statement, but the decision on this will be determined in the near future.

## 4.3 PERMIT SUMMARY

The proposed action is necessary to the purpose of complying with CERCLA, RCRA, APEN, and NPDES. All portions of the action will comply with appropriate sections of these regulations.

## 5.0 FISCAL AND SCHEDULE INFORMATION

The estimated cost of this proposed action and the funding source has not been determined. The first year funding is planned for FY 1992, with completion estimated by 1998.

## 6.0 ADDITIONAL DOCUMENTATION

Standard operating procedures will be written for any new equipment and/or systems.

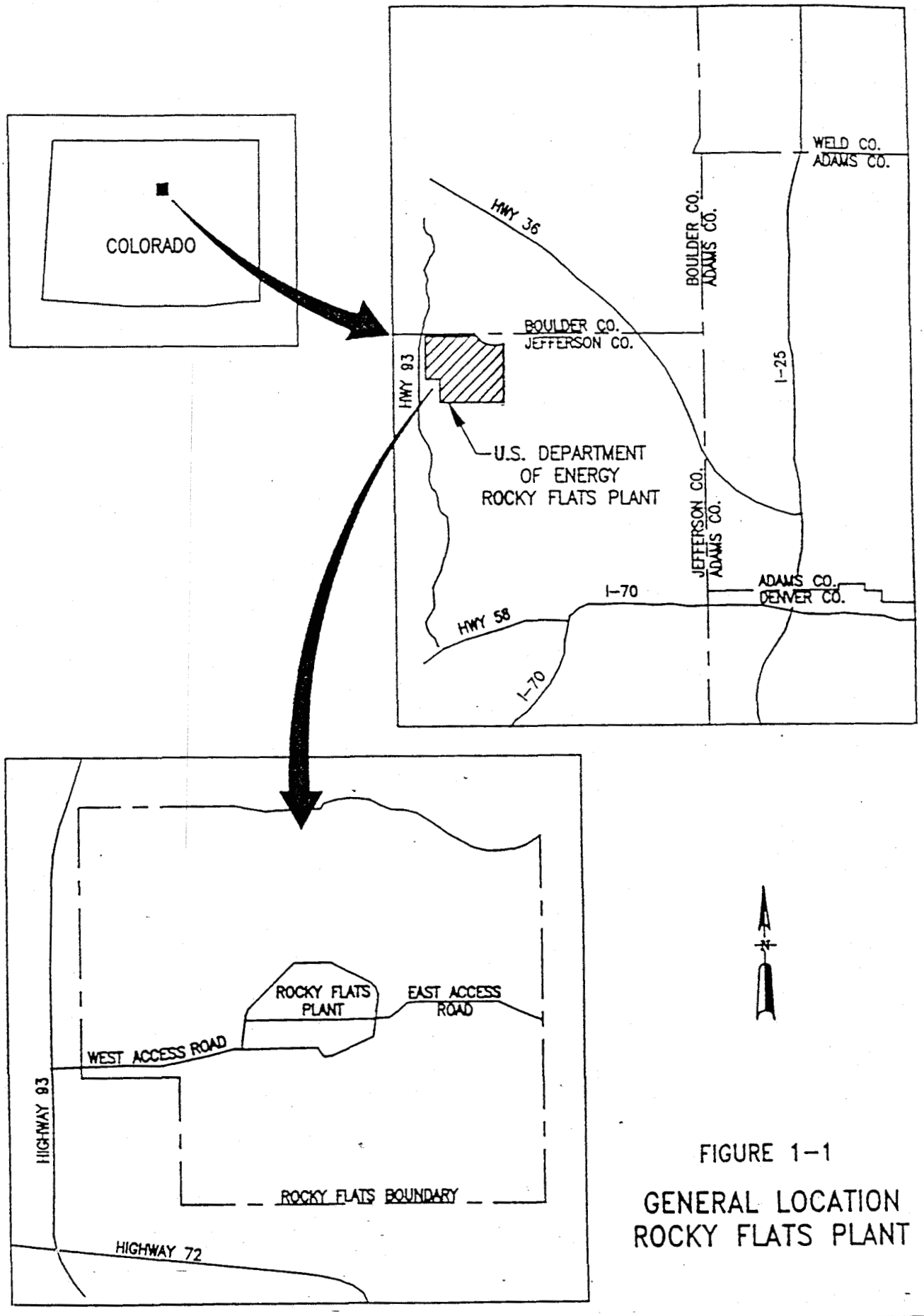
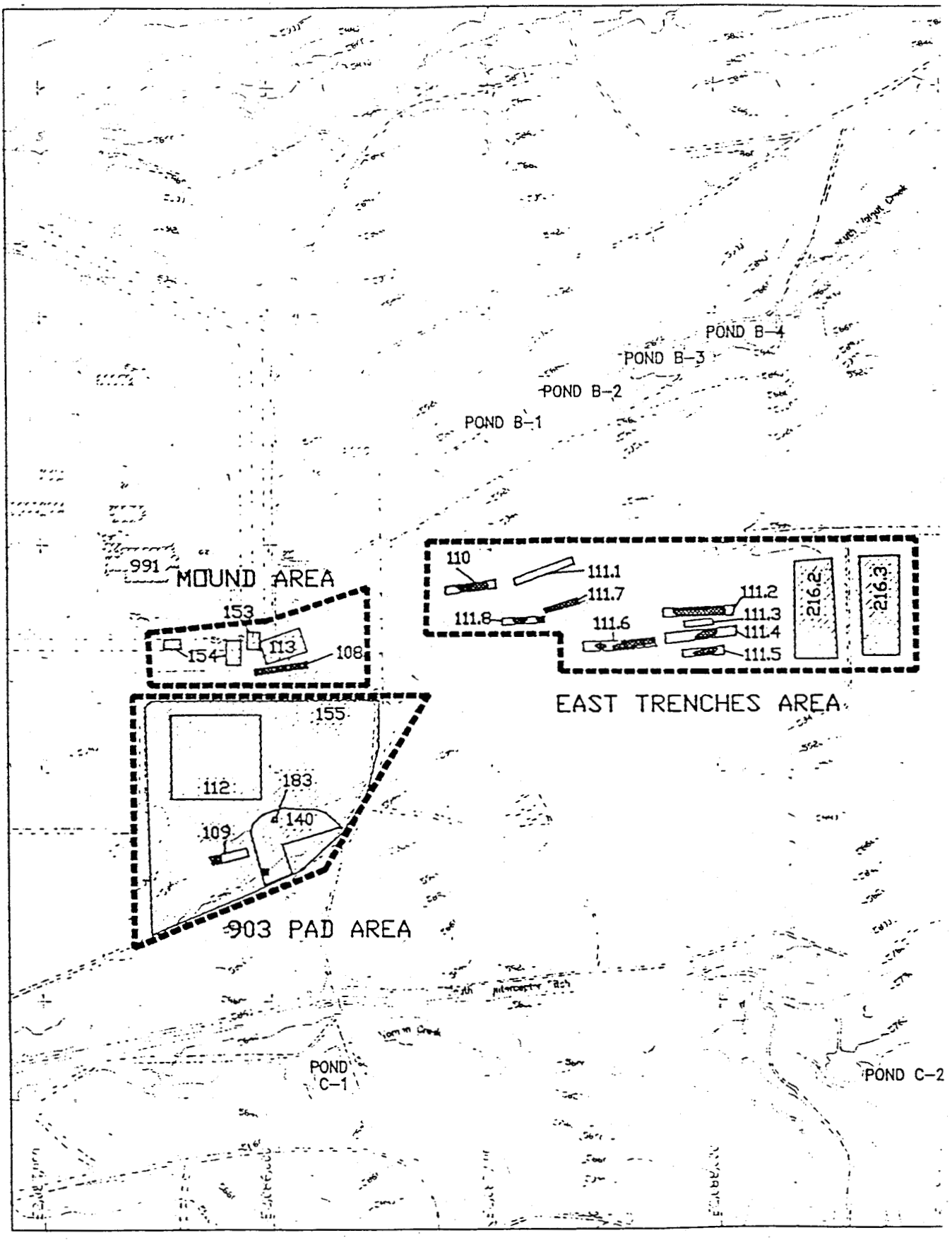



FIGURE 1-1

GENERAL LOCATION
ROCKY FLATS PLANT

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